

CLAIMS

1. A method for adaptively modifying an alert tone volume of a
2 mobile communications device, the method comprising the steps of:
sampling an ambient sound level;
4 comparing the ambient sound level to a predetermined sound
threshold;
6 if the ambient sound level is less than the predetermined sound
threshold, reducing the volume by a predetermined amount; and
8 if the ambient sound level is greater than the predetermined sound
threshold, increasing the volume by a predetermined amount.
2. The method of claim 1 wherein the mobile communications
2 device is a cellular telephone.
3. The method of claim 1 wherein the mobile communications
2 device is a radio.
4. The method of claim 1 and further including the step of
2 generating the predetermined sound threshold by sampling an ambient sound level in
response to an activation of a switch on the mobile communications device.
5. A method for adaptively modifying an alert tone volume of a
2 mobile communications device, the method comprising the steps of:
sampling an ambient sound level;
4 comparing the ambient sound level to at least one of a plurality of
predetermined thresholds;
6 if the ambient sound level is less than a lowest predetermined threshold
of the plurality of predetermined thresholds, adjusting the alert tone volume to a
8 lowest level;

if the ambient sound level is greater than the lowest predetermined
10 threshold and less than a second predetermined threshold of the plurality of
predetermined thresholds, adjusting the alert tone volume to a mid-range level; and
12 if the ambient sound level is greater than the second predetermined
threshold, adjusting the alert tone volume to a high range level.

6. The method of claim 5 wherein the step of sampling the
2 ambient sound level comprises the step of converting the ambient sound level to a
digital signal.

7. The method of claim 5 wherein the step of sampling the
2 ambient sound level comprises the step of determining an analog signal level of the
ambient sound level.

8. A method for adaptively modifying an alert tone in a cellular
2 telephone comprising a microphone and an alert vibrator, the method comprising the
steps of:
4 receiving an incoming call notification signal;
sampling an ambient sound level through the microphone;
6 comparing the ambient sound level to at least one of a plurality of
predetermined thresholds;
8 if the ambient sound level is less than a lowest predetermined threshold
of the plurality of predetermined thresholds, activating the alert vibrator;
10 if the ambient sound level is greater than the lowest predetermined
threshold and less than a second predetermined threshold of the plurality of
12 predetermined thresholds, adjusting the alert tone volume to a low level;
if the ambient sound level is greater than the second predetermined
14 threshold and less than a third predetermined threshold of the plurality of
predetermined thresholds, adjusting the alert tone volume to a mid-range level; and
16 if the ambient sound level is greater than the third predetermined
threshold, adjusting the alert tone volume to a high level.

9. The method of claim 8 and further including the step of
2 increasing the alert tone volume after a predetermined quantity of alert tones.

10. In a mobile communications device comprising an alert
2 vibrator, an alert tone generator, and a microphone, an alert tone control apparatus
comprising:

4 means for sampling an ambient sound level through the microphone;
 means for comparing the ambient sound level to at least one of a
 6 plurality of predetermined thresholds;

means for activating the alert vibrator in response to the difference
8 between the ambient sound level and the at least one of the plurality of predetermined
thresholds; and
10 means for adjusting the alert tone generator in response to the
difference between the ambient sound level and the at least one of the plurality of
12 predetermined thresholds.

11. The apparatus of claim 10 and further including an analog to
2 digital converter that converts an analog ambient sound signal to a digital ambient
sound signal.

12. In a code division multiple access cellular telephone comprising
2 an alert vibrator, an alert tone generator, and a microphone, an alert tone control
apparatus comprising:

4 means for sampling an ambient sound level through the microphone;
means for comparing the ambient sound level to at least one of a
6 plurality of predetermined thresholds;

means for activating the alert vibrator in response to the difference
8 between the ambient sound level and the at least one of the plurality of predetermined
thresholds; and

1. **Introduction**
 2. **Methodology**
 3. **Results**
 4. **Discussion**
 5. **Conclusion**
 6. **References**
 7. **Appendix**
 8. **Notes**
 9. **Tables**
 10. **Figures**
 11. **Supplementary Materials**
 12. **Author Biographies**
 13. **Conflict of Interest Statement**
 14. **Copyright**
 15. **Disclaimer**
 16. **References**
 17. **Appendix**
 18. **Notes**
 19. **Tables**
 20. **Figures**
 21. **Supplementary Materials**
 22. **Author Biographies**
 23. **Conflict of Interest Statement**
 24. **Copyright**
 25. **Disclaimer**
 26. **References**
 27. **Appendix**
 28. **Notes**
 29. **Tables**
 30. **Figures**
 31. **Supplementary Materials**
 32. **Author Biographies**
 33. **Conflict of Interest Statement**
 34. **Copyright**
 35. **Disclaimer**
 36. **References**
 37. **Appendix**
 38. **Notes**
 39. **Tables**
 40. **Figures**
 41. **Supplementary Materials**
 42. **Author Biographies**
 43. **Conflict of Interest Statement**
 44. **Copyright**
 45. **Disclaimer**
 46. **References**
 47. **Appendix**
 48. **Notes**
 49. **Tables**
 50. **Figures**
 51. **Supplementary Materials**
 52. **Author Biographies**
 53. **Conflict of Interest Statement**
 54. **Copyright**
 55. **Disclaimer**
 56. **References**
 57. **Appendix**
 58. **Notes**
 59. **Tables**
 60. **Figures**
 61. **Supplementary Materials**
 62. **Author Biographies**
 63. **Conflict of Interest Statement**
 64. **Copyright**
 65. **Disclaimer**
 66. **References**
 67. **Appendix**
 68. **Notes**
 69. **Tables**
 70. **Figures**
 71. **Supplementary Materials**
 72. **Author Biographies**
 73. **Conflict of Interest Statement**
 74. **Copyright**
 75. **Disclaimer**
 76. **References**
 77. **Appendix**
 78. **Notes**
 79. **Tables**
 80. **Figures**
 81. **Supplementary Materials**
 82. **Author Biographies**
 83. **Conflict of Interest Statement**
 84. **Copyright**
 85. **Disclaimer**
 86. **References**
 87. **Appendix**
 88. **Notes**
 89. **Tables**
 90. **Figures**
 91. **Supplementary Materials**
 92. **Author Biographies**
 93. **Conflict of Interest Statement**
 94. **Copyright**
 95. **Disclaimer**
 96. **References**
 97. **Appendix**
 98. **Notes**
 99. **Tables**
 100. **Figures**
 101. **Supplementary Materials**
 102. **Author Biographies**
 103. **Conflict of Interest Statement**
 104. **Copyright**
 105. **Disclaimer**
 106. **References**
 107. **Appendix**
 108. **Notes**
 109. **Tables**
 110. **Figures**
 111. **Supplementary Materials**
 112. **Author Biographies**
 113. **Conflict of Interest Statement**
 114. **Copyright**
 115. **Disclaimer**
 116. **References**
 117. **Appendix**
 118. **Notes**
 119. **Tables**
 120. **Figures**
 121. **Supplementary Materials**
 122. **Author Biographies**
 123. **Conflict of Interest Statement**
 124. **Copyright**
 125. **Disclaimer**
 126. **References**
 127. **Appendix**
 128. **Notes**
 129. **Tables**
 130. **Figures**
 131. **Supplementary Materials**
 132. **Author Biographies**
 133. **Conflict of Interest Statement**
 134. **Copyright**
 135. **Disclaimer**
 136. **References**
 137. **Appendix**
 138. **Notes**
 139. **Tables**
 140. **Figures**
 141. **Supplementary Materials**
 142. **Author Biographies**
 143. **Conflict of Interest Statement**
 144. **Copyright**
 145. **Disclaimer**
 146. **References**
 147. **Appendix**
 148. **Notes**
 149. **Tables**
 150. **Figures**
 151. **Supplementary Materials**
 152. **Author Biographies**
 153. **Conflict of Interest Statement**
 154. **Copyright**
 155. **Disclaimer**
 156. **References**
 157. **Appendix**
 158. **Notes**
 159. **Tables**
 160. **Figures**
 161. **Supplementary Materials**
 162. **Author Biographies**
 163. **Conflict of Interest Statement**
 164. **Copyright**
 165. **Disclaimer**
 166. **References**
 167. **Appendix**
 168. **Notes**
 169. **Tables**
 170. **Figures**
 171. **Supplementary Materials**
 172. **Author Biographies**
 173. **Conflict of Interest Statement**
 174. **Copyright**
 175. **Disclaimer**
 176. **References**
 177. **Appendix**
 178. **Notes**
 179. **Tables**
 180. **Figures**
 181. **Supplementary Materials**
 182. **Author Biographies**
 183. **Conflict of Interest Statement**
 184. **Copyright**
 185. **Disclaimer**
 186. **References**
 187. **Appendix**
 188. **Notes**
 189. **Tables**
 190. **Figures**
 191. **Supplementary Materials**
 192. **Author Biographies**
 193. **Conflict of Interest Statement**
 194. **Copyright**
 195. **Disclaimer**
 196. **References**
 197. **Appendix**
 198. **Notes**
 199. **Tables**
 200. **Figures**
 201. **Supplementary Materials**
 202. **Author Biographies**
 203. **Conflict of Interest Statement**
 204. **Copyright**
 205. **Disclaimer**
 206. **References**
 207. **Appendix**
 208. **Notes**
 209. **Tables**
 210. **Figures**
 211. **Supplementary Materials**
 212. **Author Biographies**
 213. **Conflict of Interest Statement**
 214. **Copyright**
 215. **Disclaimer**
 216. **References**
 217. **Appendix**
 218. **Notes**
 219. **Tables**
 220. **Figures**
 221. **Supplementary Materials**
 222. **Author Biographies**
 223. **Conflict of Interest Statement**
 224. **Copyright**
 225. **Disclaimer**
 226. **References**
 227. **Appendix**
 228. **Notes**
 229. **Tables**
 230. **Figures**
 231. **Supplementary Materials**
 232. **Author Biographies**
 233. **Conflict of Interest Statement**
 234. **Copyright**
 235. **Disclaimer**
 236. **References**
 237. **Appendix**
 238. **Notes**
 239. **Tables**
 240. **Figures**
 241. **Supplementary Materials**
 242. **Author Biographies**
 243. **Conflict of Interest Statement**
 244. **Copyright**
 245. **Disclaimer**
 246. **References**
 247. **Appendix**
 248. **Notes**
 249. **Tables**

10 means for adjusting the alert tone generator in response to the
difference between the ambient sound level and the at least one of the plurality of
12 predetermined thresholds.

13. The apparatus of claim 12 and further including a receiver that
2 receives an incoming call indication signal.

14. The apparatus of claim 13 wherein the means for sampling
2 operates in response to the incoming call indication signal.

15. The apparatus of claim 13 and further including an analog to
2 digital converter that converts the ambient sound level to a digital signal.

16. A method for adaptively modifying an alert tone volume of a
2 mobile communications device, the method comprising the steps of:

generating a sound threshold by sampling a first ambient sound level in
4 response to a switch activation;

receiving a call indication;

6 sampling a second ambient sound level;

comparing the second ambient sound level to the sound threshold;

8 if the second ambient sound level is less than the sound threshold,
reducing the volume by a predetermined amount; and

10 if the second ambient sound level is greater than the sound threshold,
increasing the volume by a predetermined amount.